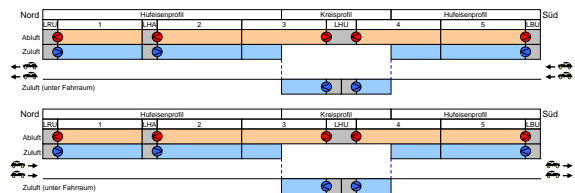
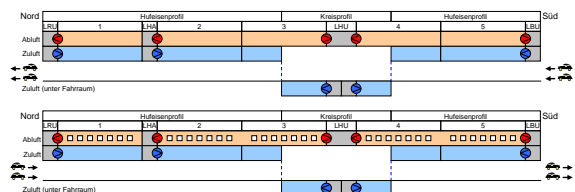


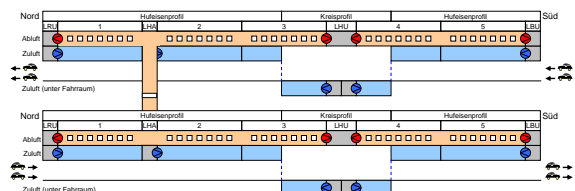
Overview of the Seelisbergtunnel



Original tunnel-ventilation system



Ventilation system after the preliminary measures



Ventilation system after the retrofit project

Description

The Seelisbergtunnel (SBT) is about 9.25 km long. Each of the two tubes has unidirectional traffic on two lanes. SBT was inaugurated in 1980 and is situated on the national highway N02 between Lucerne and Altdorf.

Preliminary measures were taken on the south tube with installation of remote-controlled dampers, new instrumentation and ventilation control system. Thereby conditions were achieved that enabled the undertaking of the subsequent retrofit project.

During the execution of the retrofit project, remote-controlled dampers were installed in the north tube. For redundancy reasons, a connection was established between the extraction ducts. A novel closed-loop ventilation control principle using exhaust and fresh-air supply was implemented and thoroughly tested.

Services

HBI Haerter consulting Engineers provided the following services:

Preliminary measures (VoMa), 2007 - 2012

- Ventilation concept and detailed prescriptions for the tunnel-ventilation control for normal operation and smoke management
- Successive implementation and tests of ventilation control system

Planning, supervision of execution and commissioning:

- 96 remote-controlled dampers, north tube
- Tunnel-ventilation control

Retrofit project (EP), 2009 - 2016

- Ventilation concept including connecting both tubes to obtain the required redundancy, prescription of the tunnel-ventilation control for normal operation and smoke management

Planning, supervision of execution and commissioning:

- Revision of exhaust and fresh-air fans
- 96 remote-controlled dampers, north tube
- 1 duct separation damper
- Tunnel-ventilation control including closed-loop control of air flow in traffic space